

BG-EPTZ-AF

4K UHD USB 3.0 ePTZ Camera with Auto-Framing Function

User Manual







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Statement

Please read these instructions carefully before connecting, operating, or configuring this product. Please save this manual for future reference.

Safety Precaution

- To prevent damaging this product, avoid heavy pressure, strong vibration, or immersion during transportation, storage, and installation.
- The housing of this product is made of organic materials. Do not expose to any liquid, gas, or solids which may corrode the shell.
- Do not expose the product to rain or moisture.
- To prevent the risk of electric shock, do not open the case. Installation and maintenance should only be carried out by qualified technicians.
- Installation and use of this product must strictly comply with local electrical safety standards.
- Do not use the product beyond the specified temperature, humidity, or power supply specifications.
- This product does not contain parts that can be maintained or repaired by users. Damage caused by dismantling the product without authorization from BZBGear is not covered under the warranty policy.
- Do not turn the camera head manually. Doing so may result in mechanical damage. Camera should only be placed on a stable horizontal surface and cannot be installed at an angle.
- Make sure there are no obstacles within the camera's rotational range when installing. Never power on before installation has been completed.



Introduction

The BG-EPTZ-AF is a 4K UHD ePTZ video conference camera. It is built with AI functionality to automatically detect and frame all participants in a meeting. It also utilizes advanced ISP processing algorithms that provide vivid images with even brightness, strong color layering, high resolutions, and fantastic color rendition. Easy to install and maintain, the BG-EPTZ-AF is a stable and reliable camera great for small conference rooms.

Features

- **4K UHD:** It employs one 1/2.5-inch, 8 million pixels high quality CMOS sensor; provides 4K@ 30fps MJPG
- **EPTZ:** EPTZ and 4X digital Zoom
- **Built-in pickup:** Includes 2 built-in microphones. A noise suppression algorithm ensures your voice is perfect. The effective pickup distance is up to 5 meters.
- **Dual stream output:** The USB3.0 port supports main stream and sub-stream output at the same time.
- **Auto framing:** With an excellent facial detection algorithm, this camera automatically adjusts the zoom according to the number of people in the meeting to capture as many as possible in frame.
- **Wide view angle without distortion:** 120° super wide view angle lens
- **Low Noise and High SNR:** Low Noise CMOS effectively ensures high SNR of video. Image is still clear even under low light conditions.
- **Multiple Installation Options:** Equipped with molded clamp, it is easy to install on any devices, such as LCD screens, PCs, tables, or tripods.
- **Easy to Use:** No need to download proprietary software or drivers. USB Plug and play.

Packing List

- 1x BG-EPTZ-AF Camera
- 1x Remote control
- 1x USB3.0 cable
- 1x User Manual
- 1x Quick Start Guide



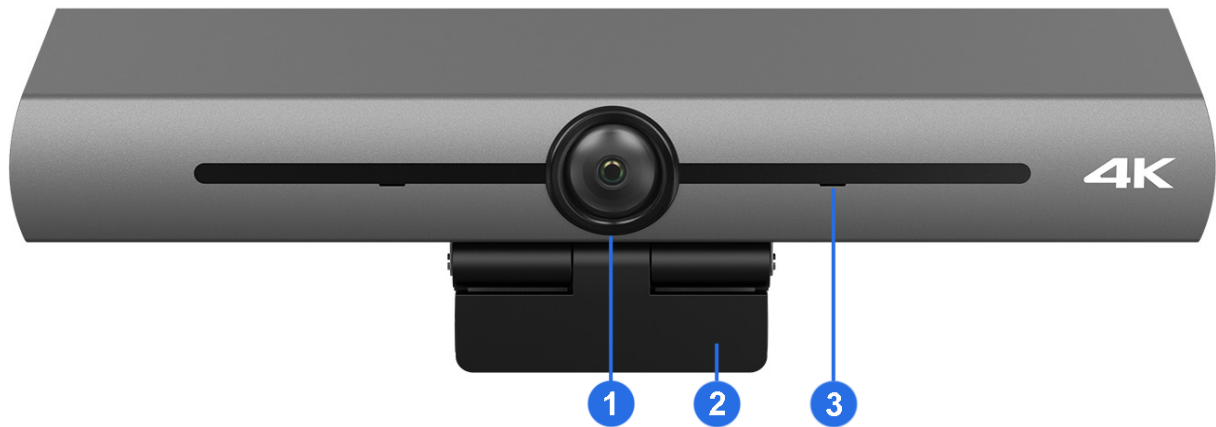
Technical Specifications

Camera Parameters	
Image Sensor	1/2.5" High Quality 4K CMOS Sensor
Effective Pixels	8.28MP 16:9
Video output port	1x USB 3.0, Type B, support audio output over USB 3.0
Audio input	2 built-in MIC pickups
Video Format	Mainstream: 3840x2160p@30Hz, 1920x1080p@30Hz/25, 1280x720p@30Hz/25, etc. Sub-stream: 1280x720p@30Hz/25, 640x480p@30Hz/25, 320x172p@30Hz/25, etc.
View Angle	126°(D)/120°(H)/85°(V)
Lens	f=2.72mm
Aperture	F2.5
Digital zoom	4X
Min Illumination	0.1Lux (F1.8, AGC ON)
DNR	2D & 3D DNR
Ultra-low illumination	On/off
White Balance	Auto / Manual/ One Push/ 3000K/ 3500K/ 4000K/ 4500K/ 5000K/ 5500K/ 6000K/ 6500K/ 7000K
Focus	Auto / Manual / One push Focus
Exposure	Auto / Manual
Auto framing	On/off/sensitivity
Backlight compensation	On/off
Dual stream	On/off
SNR	≥50dB
USB Features	
Operating Systems	Windows 7 (1080p at the most), Windows 8.1, Windows 10, macOS™ 10.10 or higher, Linux (Require to support UVC)
Video Compression format	YUY2, MJPG, H.264, H.265
Audio over USB 3.0	Support
USB communication protocol	UVC, UAC
PTZ control	Support EPTZ
Hardware requirement	2.4 GHz Intel® Core 2 Duo processor or higher, 2GB RAM or more, USB 2.0 /USB 3.0 port (USB 3.0 is needed for 4K)
Other Parameters	
Input Voltage	5V
Input Current	1A (Max)
Power consumption	5W (Max)
Store Temperature	-10°C~+60°C
Store Humidity	20%~90%
Working Temperature	-10°C~+50°C
Working Humidity	20%~80%
Dimensions (WxHxD)	222 x 93 x 57mm
Weight	1.17 lbs [0.53kg]
Application	Indoor

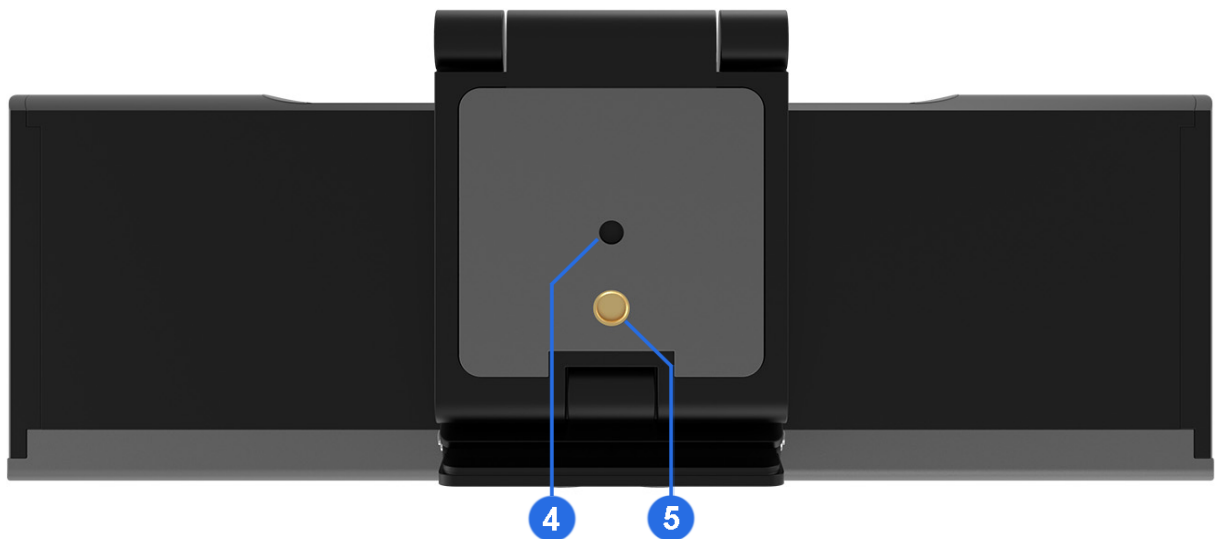


Camera Overview

Camera Interfaces



1. Camera Lens
2. Bracket
3. Built-in MIC



4. Tripod fixing hole
5. Positioning hole



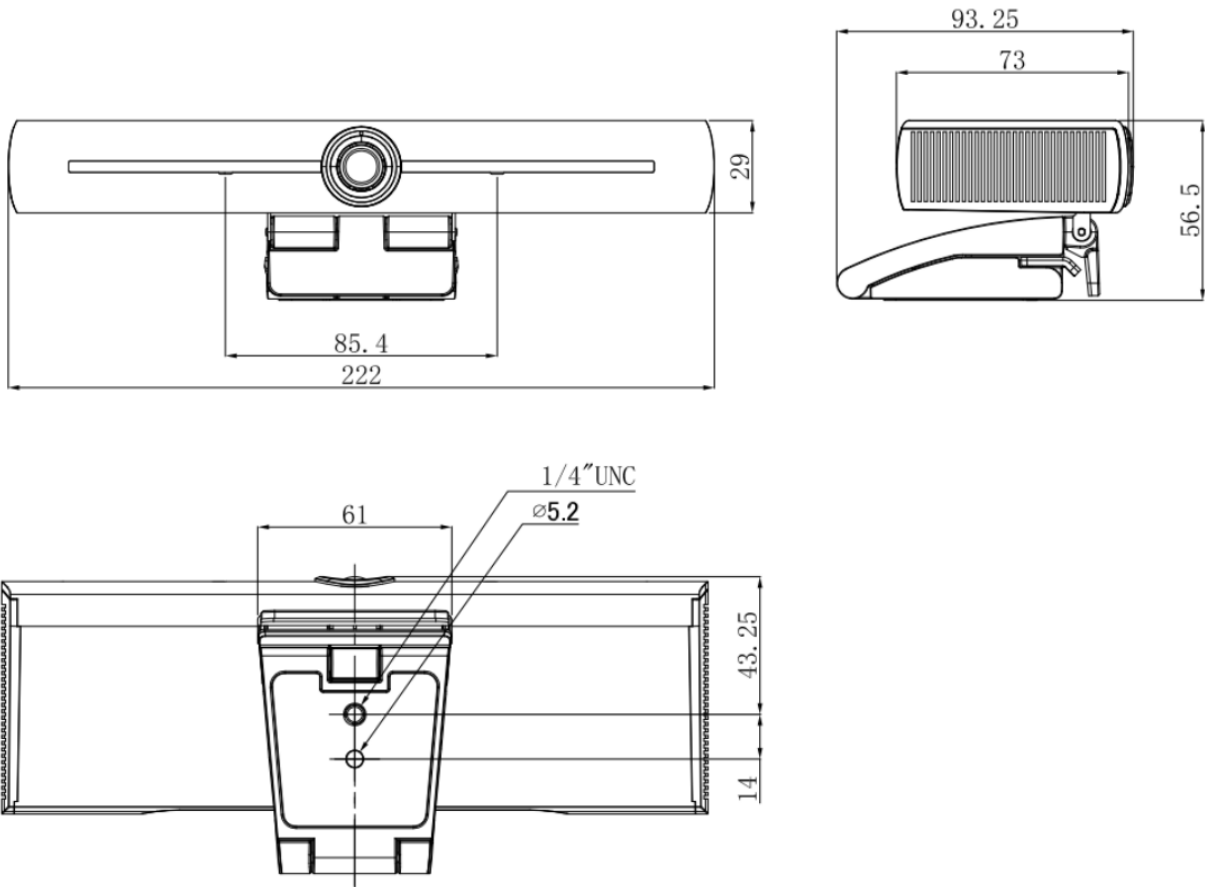
6. **USB:** Connect the USB 3.0 type B cable to a PC for plug & play connectivity for any conferencing service like Skype or Zoom.



Camera Operation

1. **Product Installation:** The camera can be installed on an LCD screen, the top of a computer, or placed directly on a desk or tripod.
2. **Connect camera via USB cable** to computer, video conference terminal, or other USB input device. Sign into your desired video conferencing software and select the camera as the video device to activate image output.

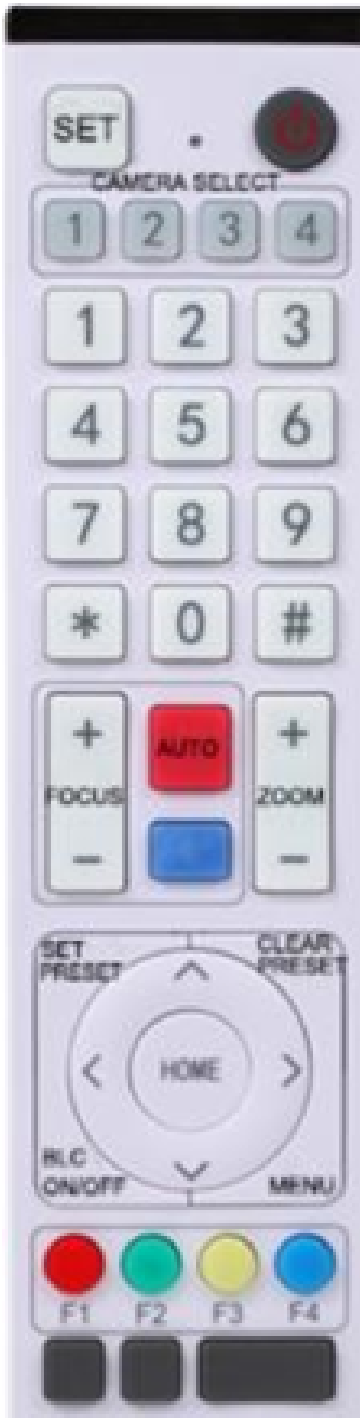
Camera Dimensions





Remote Control

Keys Instruction



1. **Standby Key** (not supported currently)
The camera enters standby mode if the power button is pressed for 3 seconds. Press and hold power for 3 seconds to wake up the camera and it will perform the system self-check again and return to the HOME position (If preset (0) position is set, the camera will return to the preset (0) position).
2. **Camera Address Selection**
Select the camera address
3. **Number Key**
Set or call 0-9 presets
4. ***/# Keys**
Key combination use
Long Press (5s) "SET" + "*" at the same time until the controller light turns on. Power on the camera again and it will successfully pair with the controller.
Long Press (5s) "SET" + "*" until the controller light turns on. Power on the camera again and it will cancel pairing with the controller.
5. **Focus Control Key**
This camera does not support manual focus control.
6. **Zoom Control Key**
Manual zoom only functions when the auto-framing feature is disabled.
7. **Set or Clear Preset key:**
Set Preset: Set preset key + 0-9 number key
Clear Preset key: Clear preset key + 0-9 number key
8. **Electronic Pan/Tilt Control Key**
Press Key : Up
Press Key : Down
Press Key : Left
Press Key : Right
"HOME" Key: Return to the middle position or enter into the sub-menu
9. **BLC Control Key**
Backlight ON / OFF: Turn on or off the back light
10. **Menu Setting**
Open or close the OSD menu
Enter / exit the OSD menu or return to the previous menu



11. Address Setting

- 【*】+【#】+【F1】: Camera Address No.1
- 【*】+【#】+【F2】: Camera Address No. 2
- 【*】+【#】+【F3】: Camera Address No. 3
- 【*】+【#】+【F4】: Camera Address No. 4

12. Key Combination Functions

- 1) 【#】+【#】+【#】: Clear all presets
- 2) 【*】+【#】+【6】: Restore factory defaults
- 3) 【*】+【#】+【9】: Flip switch
- 4) 【*】+【#】+【4】: Menu set to English
- 5) 【*】+【#】+【3】: Menu set to Chinese
- 6) 【*】+【#】+【0-9】: Switch video format
- 7) 【*】+【#】+ Manual: Restore the default username, password, and IP address

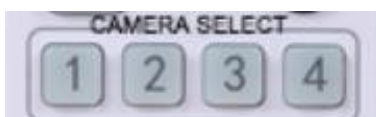
Applications

Power on the camera, press the “ SET ” and “ * ” keys together for 5 seconds, the indicator light will be on. Then release the button and power on the camera again when the light is flashing. The pairing process will be complete when the indicator light stops flashing. Then users can control the pan/tilt/zoom, set and call preset positions via the wireless remote controller.

Key Instruction:

- 1) In this manual, “press the key” means a click rather than a long-press, and a special note will be given if a long-press for more than one second is required.
- 2) When a key-combination is required, do it in sequence.
For example, “ 【*】+【#】+ 【F1】 ” means press“【*】”first and then press“【#】” and last press“【F1】”.

1. Camera Selection



Select the camera address to control.

2. Pan/Tilt Control



Up: press ▲ **Down:** press ▼

Left: press ◀ **Right:** press ▶

Back to middle position: press“【HOME】”

Press and hold the up/down/left/right key, the pan/tilt movements will move from slow to fast, until it gets to the endpoint. It will stop as soon as the key is released.



3. Presets



1) Preset setting: to set a preset position, the users should press the “【SET PRESET】” key first and then press the number key 0-9 to set a relative preset,

Note: 10 preset positions in total are available by remote controller.

2) Preset calling: Press a number key 0-9 directly to call a relative preset.

Note: Nothing will happen if a relative preset position is not set.

3) Preset clearing: to clear a preset position, the user can press the “【CLEAR PRESET】” key first and then press the number key 0-9 to clear the relative preset;

Note : press the“【#】” key three times continually to clear all the presets.

4. Zoom Control



ZOOM IN: press “+” key

ZOOM OUT: press “-” key

Note : Manual zoom control only functions when the auto-framing feature is disabled!

5. Focus Control



Focus (near):Press “【focus+】” key (Valid only in manual focus mode)

Focus (far): Press “【focus-】”key (Valid only in manual focus mode)

Auto Focus: yes

Manual Focus: yes

Press and hold the key, the focus adjustment will continue until the key is released.

6. Address Setting



【*】+【#】+【F1】:Camera Address No. 1

【*】+【#】+【F2】:Camera Address No. 2

【*】+【#】+【F3】:Camera Address No. 3

【*】+【#】+【F4】:Camera Address No. 4

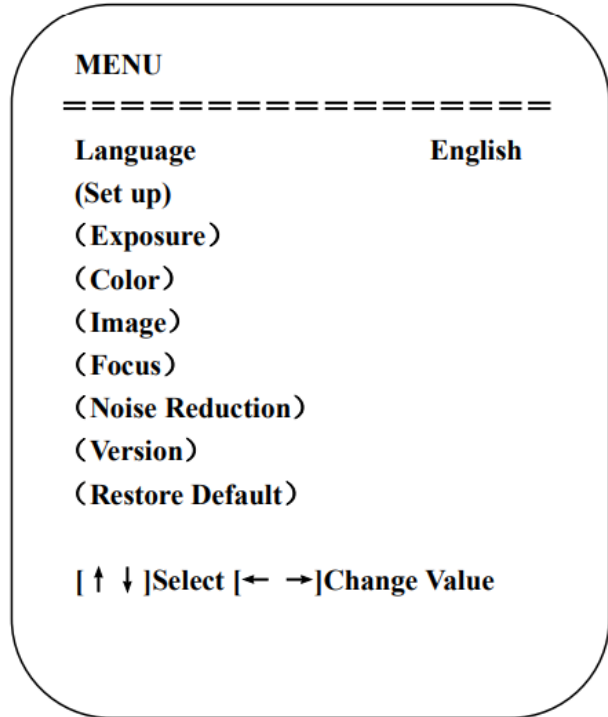


Menu Introduction

Main Menu

When using MJPG/ H.264 / H.265 compression, press **[MENU]** key to display the menu, using the up and down arrows to point at or highlight the selected items.

Language: press **[← →]** key to select Language



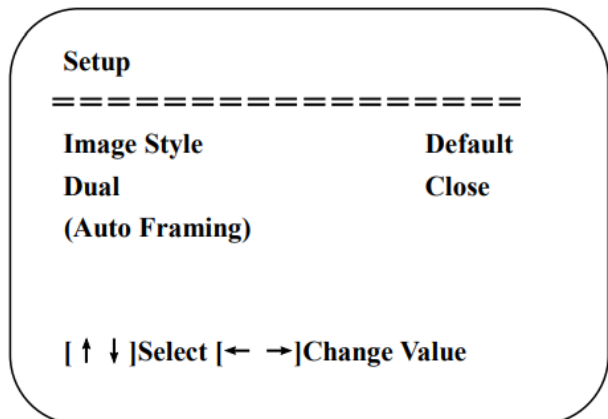
Setup Setting

Move the pointer to SETUP in the Main Menu, click the **[HOME]** and enter the (SETUP SET) as follows:

Image Style: Default/ Conference/ Clear/ Bright/ Soft Options

Dual: open/close

Auto Zoom: open/close, sensitivity 0-7





Exposure Setting

Move the pointer to EXPOSURE in the Main Menu, click the【HOME】and enter the (EXPOSURE SET) as follows:

Mode : Auto, Manual, Shutter priority, Iris priority and Brightness priority.

EV : On/Off (only available in auto mode)
Compensation Level: -7~7 (only available in auto mode when EV is ON)

BLC: ON/OFF for options (only available in auto mode) Dynamic range: adjustable items: 1 ~ 8, close

Anti-Flicker: OFF/50Hz/60Hz for options (only available in Auto/Iris priority/Brightness priority modes)

Gain Limit: 0~15 (only available in Auto/ Iris priority /Brightness priority mode)

WDR: Off, 1~8

EXPOSURE

Mode	Auto
EV	OFF
BLC	OFF
Flicker	50Hz
G.Limit	3
DRC	2

[↑ ↓]Select [← →]Change Value

Color Setting

Move the pointer to COLOR in the Main Menu, click the【HOME】and enter the (COLOR SET) as follows:

WB Mode: Auto, Manual, One Push, 3000K, 3500K, 4000K, 4500K, 5000K, 5500K, 6000K, 6500K, 7000K

RG Tuning: -10~10 (only available in Manual mode)

BG Tuning: -10~10 (only available in Manual mode)

Red Gain: 0~255 (only available in Manual mode)

Blue Gain: 0~255 (only available in Manual mode)

Saturation: 60%, 70%, 80%, 90%, 100%, 110%, 120%,130%, 140%,150%, 160%, 170%, 180%, 190%, 200%

Hue: 0~14

AWB Sensitivity: high/middle/low (only available in Manual mode)

COLOR

WB Mode	Auto
RG Tuning	0
BG Tuning	0
Saturation	100%
Hue	7
AWB Sensitivity	High

[↑ ↓]Select [← →]Change Value



5. Image Setting

Move the pointer to IMAGE in the Menu, click the【HOME】and enter the (IMAGE) as follows,

Brightness: 0~14

Contrast: 0~14

Sharpness: 0~15

Flip-H: On/Off

Flip-V: On/Off

B&W Mode: color, black/white

Gamma: default, 0.45, 0.50, 0.55, 0.63

DCI: Dynamic Contrast: Off, 1~8

IMAGE	
=====	
Brightness	7
Contrast	7
Sharpness	4
Flip-H	OFF
Flip-V	OFF
B&W-Mode	Color
Gamma	Default
DCI	Close
Low-Light Mode	Close
[↑ ↓]Select [← →]Change Value	

6. Focus Setting

This camera supports autofocus only; there is no manual adjustment possible.

7. Noise Reduction Setting

Move the pointer to NOISE REDUCTION in the Menu, click the【HOME】and enter the (NOISE REDUCTION) as follows,

2D Noise Reduction: Auto, close, 1~7

3D Noise Reduction: Close, 1~8

Dynamic Hot Pixel: Close, 1~5

NOISE REDUCTION	
=====	
NR-2D	2
NR-3D	5
Dynamic Hot Pixel	OFF
[↑ ↓]Select [← →]Change Value	



8. Version

Move the pointer to VERSION

VERSION

=====

Cam Version	1.0.2	2019-11-28
Focus Version	1.0.6	2018-8-21

[↑ ↓]Select [← →]Change Value

9. Restore Default

Move the pointer to RESTORE DEFAULT in the Main Menu, click **[HOME]** and enter RESTORE DEFAULT as below:

Restore default: Yes/No for options. (the video format and color style won't be restored)

Note: If the address of the former remote is not 1 but another one such as 2, 3, or 4 the corresponding camera address will restore to 1 when all parameters or system parameters are restored. User should change the remoter address to be 1 (press No.1 according to the camera so to get normal operation)

RESTORE DEFAULT

=====

Restore Default?	NO
-------------------------	-----------

[↑ ↓]Select [← →]Change Value



Maintenance and Troubleshooting

Camera Maintenance

- 1) Please disconnect the camera if it is not used for a long time.
- 2) Use soft cloth or tissue to clean the camera cover.
- 3) Wipe it with a soft, dry cloth when cleaning the camera lens. Wipe it gently with a mild detergent if needed. Do not use strong or corrosive detergents to avoid scratching the lens and affecting the image;

Troubleshooting

- 1) No video output
 - a. Check whether the USB cable is securely connected and power indicator light is ON.
 - b. Verify camera completes self-check after reboot.
 - c. Restart PC
 - d. Check whether the camera is recognized by the computer.
- 2) Intermittent Image
 - a. Check the USB cable and connection.
- 3) Image dithering while zooming in or out
 - a. Verify the camera is securely mounted
 - b. Check for any devices near the camera that may transmit vibration
- 4) Remote control does not work
 - a. Repeat pairing of the camera and the wireless remote control.
 - b. Set the camera address to 1 (address reverts to 1 after restoring factory defaults)
 - c. Check batteries
 - d. Verify camera is in normal operating mode (see Table 2.2 and Table 2.3)
 - e. Exit the menu, the menu only displays under MJPG/H.264/H.265 compression format.

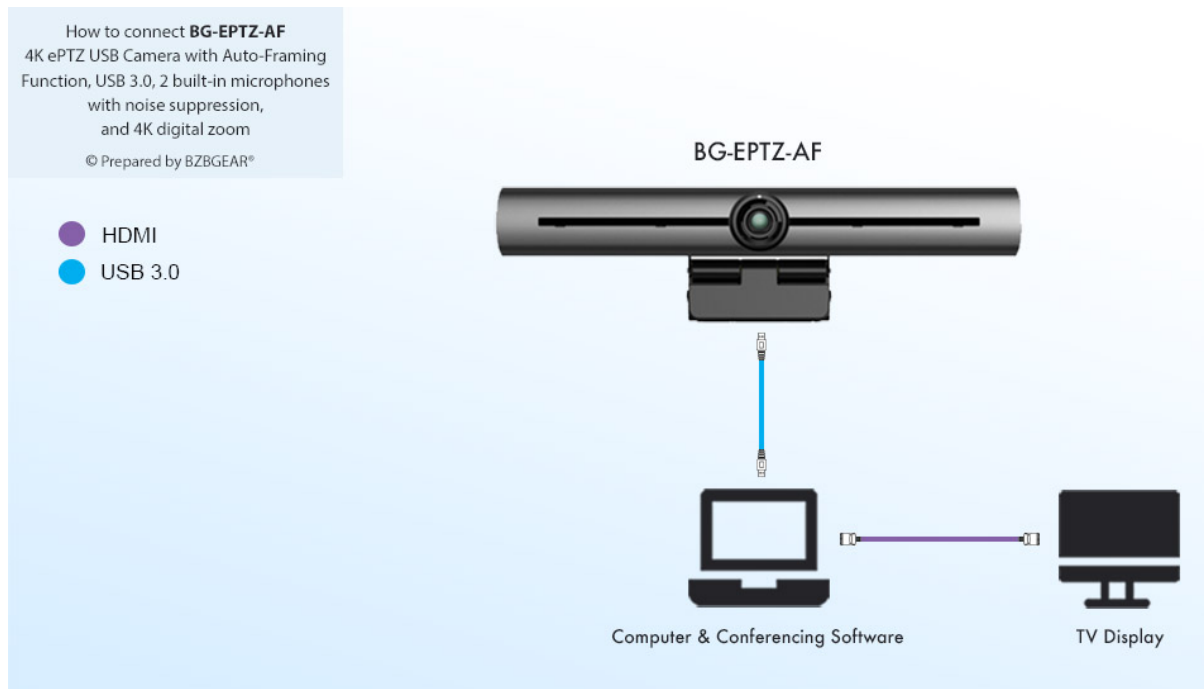


Application Example

How to connect **BG-EPTZ-AF**
4K ePTZ USB Camera with Auto-Framing
Function, USB 3.0, 2 built-in microphones
with noise suppression,
and 4K digital zoom

© Prepared by BZBGear®

- HDMI
- USB 3.0





Tech Support

Have technical questions? We may have answered them already!

Please visit BZBGear's support page (bzbgear.com/support) for helpful information and tips regarding our products. Here you will find our Knowledge Base (bzbgear.com/knowledge-base) with detailed tutorials, quick start guides, and step-by-step troubleshooting instructions. Or explore our YouTube channel, BZB TV (youtube.com/c/BZBTVchannel), for help setting up, configuring, and other helpful how-to videos about our gear.

Need more in-depth support? Connect with one of our technical specialists directly:

Phone

1.888.499.9906

Email

support@bzbgear.com

Live Chat

bzbgear.com

Warranty

BZBGear Pro AV products and cameras come with a three-year warranty. An extended two-year warranty is available for our cameras upon registration for a total of five years.

For complete warranty information, please visit bzbgear.com/warranty.

For questions, please call 1.888.499.9906 or email support@bzbgear.com.



Mission Statement

BZBGear is a breakthrough manufacturer of high-quality, innovative audiovisual equipment ranging from AVoIP, professional broadcasting, conferencing, home theater, to live streaming solutions. We pride ourselves on unparalleled customer support and services. Our team offers system design consultation, and highly reviewed technical support for all the products in our catalog. BZBGear delivers quality products designed with users in mind.



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